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# Orange County Agri-News

GET THE DIRT ON ORANGE COUNTY AGRICULTURE

December/January 2021/2022



**PURDUE**  
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Extension - Orange County



## From the Office...

*I hope this newsletter finds you well and enjoying the holiday season. I want to wish you and your family a Merry Christmas! We've already seen snow, ice, and then some 70 degree December days. If one of you guys are out there messing with the thermostat, would you cut it out?! Who knows what kind of spring we're in for, but we've got to look at the bright side and knock on wood that we haven't seen a ton of mud and extreme weather this winter.*

*I'm really looking forward to another year of Extension in Orange County. I really hope you will take advantage of the programs I put on, because I do them specifically for you. If you've got something you'd like to learn more about PLEASE let me know about it, because there's no idea too crazy. I hope you and yours stay safe and warm this winter.*

*Keep Growing,  
Abby Heidenreich*

# In the Works

Here are a few of the things going on around Orange County:.....

**Harvest of the Month** - Every month, Abby teaches a Harvest of the Month lesson either in person or virtually at all the elementary schools in Orange County. You can view the videos she made that go with the lessons on the Purdue Extension - Orange County YouTube Channel!

**Text Alerts:** Abby has recently set up a system for text alerts to be sent out with seasonal reminders, important information and upcoming events. This is not spam, it's really Abby typing out the info and sending it! The idea is to do short alerts with info rather than long emails or facebook posts that don't get attention. If you'd like to sign up, you can text "EZLIVESTOCK" or "EzcROPTExT" to (812) 393-2479.

**Transition Planning:** I'm working on putting together a program for farms that are hoping to pass down operations to next generations. I know of several in Orange County who would benefit from this type of thing so please start thinking about how you're going to approach keeping that farm in your family.

**Farmers Market:** Abby is planning to have an Extension Office booth at the Orleans Farmers Markets more regularly in the future. The plan is to feature different topics and hopefully have some Master Gardener volunteers there as well to answer gardening questions!

**Diversification & Niche Marketing:** Date: February 25th. I'm working on putting together a Niche Marketing program for those interested. If you have ideas or topics you'd like to see featured, please let me know!!

**Local Foods Database:** With our new website launch, we have a lot more freedom to create webpages for our needs. I would like to put together a listing of all local food options - including contact info for those who sell produce, eggs, freezer beef, meats and other ag products. A landing page that would guide people to local food options that they may not otherwise have known about. If you're interested in this, please let me know.

**Farm Rescue Training/Safety:** Last year, I put on a grain bin rescue workshop. I'd like to offer another topic for first responders and volunteers to learn about. What are some topics you think would be good for first responders to learn about when responding to a farm call?

## Check Out Our New Website!

# [www.extension.purdue.edu/orange](http://www.extension.purdue.edu/orange)

### FOLLOW US ON SOCIAL MEDIA!

**Facebook:**  
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**Phone :**  
**(812)723-7107**  
**Website:**  
**[Extension.purdue.edu/orange](http://Extension.purdue.edu/orange)**



If you can't tell by reading this page, *I want to hear from you!!*

Let's have a conversation about Orange County Agriculture. Call me at 812-723-7107 or stop by the Extension Office at 205 E Main Street in Paoli.

# Field Meals On Wheels

Taste of Home



## Frosted Banana Bars

★★★★☆

**⌚ TOTAL TIME:** Prep: 15 min. Bake: 20 min. + cooling

**🍴 YIELD:** 3 dozen.

“These bars are always a hit at potlucks in the small rural farming community where my husband and I live. I also like to provide them for coffee hour after church. They’re so moist and delicious that wherever I take them, they don’t last long. —Karen Dryak, Niobrara, Nebraska

## Ingredients

1/2 cup butter, softened

2 cups sugar

3 large eggs, room temperature

1-1/2 cups mashed ripe bananas (about 3 medium)

1 teaspoon vanilla extract

2 cups all-purpose flour

1 teaspoon baking soda

Dash salt

### FROSTING:

1 package (8 ounces) cream cheese, softened

1/2 cup butter, softened

4 cups confectioners' sugar

2 teaspoons vanilla extract

## Directions

1. Preheat oven to 350°. In a large bowl, cream butter and sugar until light and fluffy, 5-7 minutes. Beat in the eggs, bananas and vanilla. Combine the flour, baking soda and salt; stir into creamed mixture just until blended.

2. Transfer batter to a greased 15x10x1-in. baking pan. Bake for 20-25 minutes or until a toothpick inserted in the center comes out clean. Cool in pan on a wire rack.

3. For frosting, in a small bowl, beat cream cheese and butter until fluffy. Add confectioners' sugar and vanilla; beat until smooth. Frost bars.

# Start Clean, Stay Clean

By: John Bonkowski

We are in the swing of the holiday season and Christmas decorations, ranging from trees to living wreaths, are for sale at stores. Thinking ahead, you might already have in mind how to dispose of plant material after the holidays, but it is important to take into consideration an important pillar of plant disease management when you decide on a location: Exclusion.

When dealing with living plant material, whether seeds, bulbs, or nursery stock, these plants could be carrying pathogens or pests from where they were originally grown (Figure 1). Movement of these materials can be a pathway for the introduction of diseases to new areas. This is not only restricted to intact or whole plants. Cut stems, flowers, mulch, wreaths and Christmas trees can also help move these organisms around.

In 2017 our lab received a wreath from an Indiana Department of Natural Resources (IDNR) Inspector that included cut stems from fir, juniper, and boxwood (Figure 2). The boxwood foliage showed symptoms of boxwood blight and we confirmed the pathogen, *Calonectria pseudonaviculata*, by microscopic examination (Figure 3 and 4). Depending on how an infected wreath was handled and disposed after the holidays, the boxwood blight pathogen could enter a customer's landscape without them knowing. *Calonectria* can survive in plant debris in the soil for years, so there is potential for infection and spread to boxwood in the landscape. Fortunately, the IDNR acted quickly in the 2017 case and, through outreach, infected wreaths that had been sold in the state were returned by customers and destroyed to prevent spread.

Exclusion as a management strategy is the first line of defense in preventing the introduction of new pests and pathogens. Starting with clean seed or nursery stock is the usually the first step in attempting to stay clean and free from diseases. Phytosanitary certification and inspection of nursery stock by regulatory agencies can help prevent the movement of infected/infested plants, but when you are purchasing plants don't hesitate to do your own inspection, so you can avoid sickly plants. Quarantining plants that were just purchased can allow time for plants to develop symptoms if they are not known to be pest free.

The spread of new pests and diseases to locations that they can thrive is regarded as inevitable, but by utilizing exclusion-type management, we can delay their entrance and prevent a disease problem from developing. Trees and wreaths can be taken to recycling centers, but we do not recommend composting the plant material on site, especially if there are visible symptoms of disease.

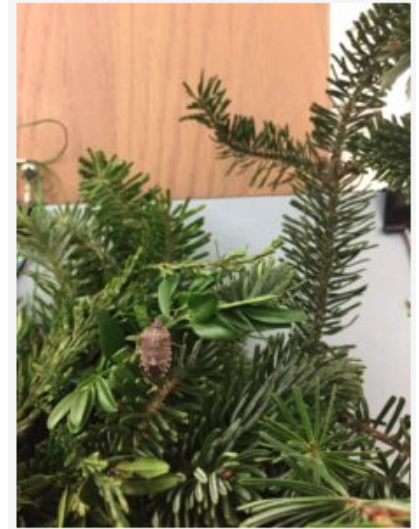


Figure 1: Brown marmorated stink bug hitchhiker on a living wreath.



Figure 2: The sample collected by the IDNR Inspector to examine for boxwood blight.



Figure 3: Boxwood leaves within the wreath that show symptoms of leaf blighting.



Figure 4: Black lesions on green boxwood stems which are characteristic of boxwood blight.



# Corn Planting Considerations for 2022

## Dan Quinn, Ph.D., Assistant Professor of Agronomy Extension Corn Specialist

The key to maximizing corn yield is largely driven by minimizing the impact of potential yield-limiting factors during the growing season. The moment the corn seed is moved into the planter and placed into the ground in the spring, yield-limiting factors begin to go to work to limit potential corn yield. Being able to identify your specific yield-limiting factors and how to manage them is an important step in producing consistent and high corn yields. The goal of the planter is to optimize seed placement, depth, spacing, and seed-to-soil contact. Corn must achieve rapid, uniform emergence, with equidistant spacing in order to get off on the right foot to maximize yield later in the season. If corn does not get off to a good start, the crop is likely already a step behind, and maximum yield potential may already be out of reach early in the season.

What factors influence corn germination and emergence?

**Soil Temperature** – variable soil temperature at planting can cause variable corn emergence, especially when corn is planted in temperatures that hover around 50°. Variable corn emergence can reduce corn yield upwards of 10%. Variable soil temperatures can be caused by variable seed depth, soil conditions, residue levels, and weather patterns.

**Soil Moisture** – like soil temperature, variable soil moisture at planting can also cause variable corn emergence. Variable soil moisture can be caused by variable seed depth, soil conditions, residue levels, and weather patterns.

**Seed-to-soil Contact** – good seed-to-soil contact is required for seeds to imbibe water and germinate. Poor seed-to-soil contact as a result of residue interference, planting too wet, and improper furrow closure can cause variable corn emergence and germination.

**Seed Depth** – the depth the seed is planted can directly determine the conditions in which the seed is planted into. Seeds planted too shallow may be planted into soil conditions that are too dry and/or too cold, whereas a seed planted too deep may be planted into soil conditions too wet. Planting seeds at improper depths and into improper conditions can result in variable seed germination and emergence.

What planter equipment should a farmer invest in?

As harvest finishes this fall, and focus begins to shift to planting next spring, a popular question is often, which equipment upgrades should I add to my planter? Planter manufacturers continue to introduce new tools and technologies to improve spring planting performance, yet it can often become confusing when choosing which equipment to add, especially since this decision is often a significant investment for many. Choosing which upgrades or changes need to be made to your planter, starts by identifying specific planting or crop stand establishment issues you already have. There is no singular piece of equipment or technology that works for every farmer, in every field, and in every situation. For example, do you currently have difficulty with non-uniform seeding depth? Then, it is possible the row-unit down pressure system needs to be checked or upgraded. Or, do you have difficulty with poor furrow closure, poor seed-to-soil contact, or residue interference? Then, it is possible the row cleaner or closing wheel systems needs to be checked or upgraded. Lastly, it is also important every year to thoroughly examine, diagnose, and maintain the certain parts or problems the planter currently has. Improper maintenance and worn-out parts can cause planting issues as well, that frankly an upgrade in new technology may not help.



# Reader's Digest—



## Judicious Use of Antibiotics-What's Next for a Beef Producer? – Dr. Michelle Arnold, UK Veterinary Diagnostic Laboratory

The Food and Drug Administration (FDA) is continuing to implement strategies to promote the \*judicious or appropriate use of antibiotics considered important in human medicine when they are used in food-producing animals. FDA's goal is to curb the development of antibiotic-resistant bacteria and in turn reduce the risk of human infections that are difficult to treat due to ineffective antibiotics. On June 11th of 2021, FDA finalized a Guidance for Industry (GFI) #263, which outlines the process for animal drug manufacturers to change all remaining antibiotic formulations used in animal health care from over-the-counter (OTC) to prescription status. Manufacturers will have two years from the date of issue to make this label change to their products. Basically, this means products commonly used by beef producers such as injectable penicillin and oxytetracycline (for example, LA-300) will no longer be available without a prescription as of June 2023.

The new GFI #263 is an extension of an earlier guidance published in 2013 designated GFI #213. As of January 2017, GFI #213 effectively moved all OTC antibiotics used in feed to Veterinary Feed Directive (VFD) status and those used in drinking water to prescription (Rx) status as well as eliminated production uses such as growth promotion. Of the 292 drugs affected by this government directive #213, 93 products used in drinking water were converted to prescription status; 115 products used in feed were converted from OTC to veterinary feed directive status; and 84 were removed from the market. Production indications were withdrawn from 31 product labels. With full implementation of GFI #213, approximately 96% of medically important antimicrobials used in animals are now under veterinary oversight. Once the recommendations in the new GFI #263 are fully implemented, all dosage forms of medically important antimicrobials approved for use in animals will only be available from, or under the supervision of, a licensed veterinarian, and only when necessary for the treatment, control or prevention of specific diseases. Producers will have to consult their veterinarian to obtain all antibiotics in any form (injectable, bolus, topical, intramammary) or for a prescription to purchase them from a distributor.

FDA's new strategy with GFI #263 is primarily focused on "medically important antimicrobial drugs" that are available without a prescription and can be given without a veterinarian's involvement. This includes, but is not limited to, beta-lactams (Penicillin G, Cephapirin), aminoglycosides (Gentamicin), lincosamides (Lincomycin), macrolides (Tylosin, Erythromycin), sulfonamides (Sulfadimethoxine, Sulfamethazine, Sulfachlorpyridazine) and tetracyclines (Oxytetracycline, Chlortetracycline). FDA first developed its list of antimicrobial drugs (antibiotics) considered "medically important" in Guidance #152, Evaluating the Safety of Antimicrobial New Animal Drugs with Regard to Their Microbiological Effects on Bacteria of Human Health Concern, published in October 2003. This list is available in Appendix A of GFI #152 and can be accessed at the following link: <https://www.fda.gov/media/69949/download> . Medical "importance" of a drug is based on its efficacy in human medicine and other factors including the usefulness of the drug in food-borne infections, the types of infections treated, the availability of alternative therapies, the uniqueness of the mechanism of action, and the ease with which resistance develops and is transferred between organisms. There are several growth promotion products in the cattle industry that are not listed in Appendix A. Bacitracin, bambarmycins (Gainpro®), laidlomycin (Cattlyst®), and ionophores (such as monensin and lasalocid) are not affected by this GFI.

The FDA has made available a webpage entitled "GFI #263: Frequently Asked Questions (FAQs) for Farmers and Ranchers" available at <https://www.fda.gov/animal-veterinary/judicious-use-antimicrobials/gfi-263-frequently-asked-questions-farmers-and-ranchers> . One specific question of interest addressed on this website is "Will a veterinarian be required to physically examine each animal before writing a prescription?" The following answer is provided by FDA:

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“Although specific requirements vary by state, veterinarians are generally not required to examine each individual animal for which a prescription is issued, as long as the veterinarian has established a valid veterinarian-client-patient relationship (VCPR) with the farmer or rancher that owns or cares for the animal(s) in need of treatment.”

Establishing a VCPR generally requires, among other things, that the veterinarian has become familiar with the management of the animals on a given farm or ranch by examining the animals and/or visiting the facility where the animals are managed. [See Box 1 for KY VCPR Requirements] Farmers and ranchers may want to consult with their veterinarian to have a plan in place prior to the transition period, including a plan for getting access to appropriate antimicrobial products to address animal health issues when a not veterinary visit is not feasible or not considered necessary by the veterinarian.”

During the two-year timeframe for implementation that began on June 11, 2021, FDA plans to work with affected stakeholders and state partners to answer questions about the voluntary transition process and provide assistance, hear feedback and answer questions about the guidance where possible. There are legitimate concerns regarding the increased cost of this legislation to beef producers and the lack of food animal veterinarians in many parts of the country. Similarly, veterinarians are concerned about the increased regulatory burden this move to prescription status will impose. The guidance document and a link for submission of comments can be found at <https://www.fda.gov/regulatory-information/search-fda-guidance-documents/cvm-gfi-263-recommendations-sponsors-medically-important-antimicrobial-drugs-approved-use-animals>. The FDA is reaching out to stakeholders for input and public comments. Comments on the proposal are due online via [www.regulations.gov](http://www.regulations.gov) by December 24, 2021.

Box 1
321.185 Veterinarian-client-patient relationship (VCPR) (1) In order for a veterinarian to practice veterinary medicine, a relationship among the veterinarian, the client, and the patient shall be established and maintained. "Veterinarian-client-patient relationship" means that: (a) The veterinarian has assumed the responsibility for making judgments regarding the health of the animal and the need for veterinary treatment, and the client, whether owner or other caretaker, has agreed to follow the instructions of the veterinarian; (b) There is sufficient knowledge of the animal by the veterinarian to initiate at least a general or preliminary diagnosis of the medical condition of the animal. This means that the veterinarian has recently seen and is personally acquainted with the keeping and care of the animal by virtue of an examination of the animal or by medically appropriate and timely visits to the premises where the animal is kept; and (c) The practicing veterinarian is readily available or shall provide medical service for follow-up in case of adverse reactions or failure of the regimen of therapy. A new regimen of therapy shall be contingent only upon cooperation of the client and availability of the subject animal.

Comments may also be submitted by mail to:

Dockets Management Staff  
HFA-305  
Food and Drug Administration  
5630 Fishers Lane, Room 1061  
Rockville, MD 20852

Comments should reference docket number FDA-2019-D-3614.

\*What is “Judicious Use”? “Judicious use”, according to FDA, is using a drug appropriately and only when necessary. The development of resistance to medically important drugs, and the resulting loss of their effectiveness, poses a serious public health threat. Misuse and overuse of antimicrobial drugs creates selective pressure that allows resistant bacteria (the “bad bugs”) to increase in number faster than susceptible bacteria and is hypothesized to transfer through the food chain to humans, potentially increasing the opportunity for individuals to become infected by resistant bacteria. This scenario may result in treatment failure or a prolonged course of disease in a human patient because the antibiotics routinely used for that condition were not effective (for example: methicillin-resistant Staph. aureus or MRSA). Because antibiotic overuse contributes to the formation of drug resistant organisms, these important drugs must be used carefully in both animal and human medicine to slow the development of resistance.

**Want to learn more? Contact Abby at the Extension office! 812-723-7107**

# Alternative Spring Burndown/Postemergence Strategies When Herbicides Are In Short Supply

BY: BILL JOHNSON AND MARCELO ZIMMER

Note: This article represents the combined thinking of weed scientists from Indiana, Kentucky, Michigan, Ohio and Pennsylvania

There is a lot of speculation about herbicide shortages for the 2022 growing season, and some products are apparently getting more expensive and/or scarce now. This will affect herbicide buying and weed management decisions for the 2022 season. The two main active ingredients that we're hearing about right now are glyphosate (Roundup, others) and glufosinate (Liberty, others), for which prices have increased substantially. There will likely be limited supplies of other pesticide active ingredients as well, but in the short term, a shortage of these two active ingredients poses some major challenges for corn and soybean production. The purpose of this article is to discuss ways to minimize the impact of herbicide shortages, primarily glyphosate, on corn and soybean production. As you search for alternatives to these two herbicides and others, the weed control guides and technical guides produced by University Extension and industry are an important tool for planning weed management programs and herbicide purchases. Links to the university publications are at the end of this article. Some guiding principles based on our experience that may help with decisions, especially where glyphosate will not be in all applications:

1. Spring tillage is an option to replace herbicide burndown. Can cause long-term compaction problems if tilled when too wet. Waiting until weeds are large makes tillage less effective. Weeds that survive tillage will be difficult to control with POST herbicides.
2. Where it's only possible to use glyphosate once, it may be needed most in the burndown. Saflufenacil can be added for enhanced control of rye and ryegrass, and marestalk. ACCase herbicides (e.g. clethodim, quizalifop) can be then used for POST grass control in soybeans. Glufosinate, Enlist Duo, or XtendiMax/Engenia can be used for many broadleaf weeds, especially the glyphosate-resistant ones. Where residual herbicides are omitted, or do not provide enough control, we would expect POST treatments to struggle more in the absence of glyphosate with weeds such as lambsquarters (So use residuals). Glyphosate is still more than just a grass herbicide.
3. If glyphosate is omitted from burndown, grasses become a bigger issue than broadleaf weeds. Options for annual grasses: Gramoxone; rimsulfuron – if small, corn only; ACCase herbicides – clethodim (wait 7 days to plant corn), quizalifop (soybeans only) – need 60 degree days, apply alone if possible, weak on winter annuals under cold conditions. Where trying to reduce glyphosate rates, a rate of 0.38 lb ae/A will control most annual grasses.
4. Burndown programs typically contain two to three “burndown” herbicides in order to ensure control of a diversity of weeds under various environmental conditions. This is why glyphosate is not used alone in burndown programs, but mixed with 2,4-D, dicamba, or Sharpen. We suggest following this same strategy when glyphosate is omitted – try to have at least two herbicides with substantial burndown activity in the mix. Increasing rates of components of the burndown mix should be generally helpful, in accordance with label guidelines for soil type, weed size, time until planting, etc. There are also other herbicides that can improve control in some mixes although we don't consider them “burndown” herbicides on their own – chlorimuron, atrazine, metribuzin.
5. There are generally more options for burndown and POST applications in corn compared with soybeans, so it might make sense to save a limited supply of glyphosate and glufosinate for use in soybeans.
6. Control of little barley and annual (Italian) ryegrass in a burndown requires glyphosate, ACCase herbicides are not good enough in spring. For annual bluegrass – ACCase can work – 60 degree day, no tank mixes. High rates of metribuzin can provide fair control of bluegrass.
7. For burndown of a legume cover prior to corn, clopyralid and dicamba are the most effective herbicides. For cereal rye, Gramoxone plus atrazine or metribuzin may be best option in the absence of glyphosate.
8. It's possible to chop and bale a cover, then use glyphosate POST to kill regrowth. The addition of an ACCase herbicide may help control regrowth in soybeans. POST corn herbicides will not kill the rye, including nicosulfuron, rimsulfuron, and Group 27 herbicides (Impact, Shieldex, Laudis etc).
9. Mixing ACCase herbicides with dicamba or 2,4-D (no glyphosate) can cause reduction in grass control due to antagonism. Apply separately to avoid this.
10. Increasing the number of applications can help with weed and herbicide management when certain products are short or glyphosate rates need to be reduced. For example, three applications instead of two: 1) Fall or early spring burndown when weeds are small; 2) residuals plus possibly additional low-rate burndown at planting; 3) POST.
11. Best opportunity to omit glyphosate or reduce the rate will be: 1) in fields treated the previous fall, or those with a low population of small weeds; and 2) where the POST program is comprehensive enough to control weeds that escape the burndown – Enlist, XtendiFlex, LL GT27 (their effectiveness also depends upon whether glyphosate is being used POST).
12. Take all necessary steps to maximize herbicide activity – optimize adjuvants and sprayer set up (nozzles, volume, pressure, speed) per label guidelines.
13. Check on availability of premix herbicides that may contain glyphosate or another herbicide that is unavailable as a single ingredient product. Examples that contain glyphosate – Sequence, Halex GT, Acuron GT, Extreme, Flexstar GT.



Burndown programs that deemphasize use of glyphosate – pros and cons.

Can be used in corn and soybeans

- Gramoxone + 2,4-D + metribuzin/atrazine (atrazine – corn only)
  - Strengths: best non-glyphosate option for rye burndown; adequate for general spring weeds including marehail <6” tall; can be applied before either corn or soybeans (depending on rate); has activity on grasses
  - Weakness: perennial weeds; large marehail; annual ryegrass; special training required to apply
  - Comments: Metribuzin rate for corn varies by soil type and is limited to a maximum of 5.33 oz of 75DF.
- Sharpen + glyphosate (low rate 0.38 – 0.56 lb ae/A) + 2,4-D
  - Strengths: adequate cereal rye and other cover crop burndown; marehail control; can be applied before either corn or soybeans (depending on rate)
  - Weakness: large weeds; overall weed control is fair due to low glyphosate rate
  - Comment: Rates higher than 1 oz require wait of 15 to 30 days to plant soybeans. Must wait 2 weeks to plant soybeans if 1 oz is mixed with flumioxazin or sulfentrazone product.
- Sharpen + 2,4-D + metribuzin/atrazine (atrazine – corn only)
  - Strengths: good foliar and residual marehail control; good initial Palmer/waterhemp control; burndown and residual in one pass
  - Weakness: does not control grasses (atrazine control grass up to an inch when applied with oil); must wait 2 weeks to plant soybeans if mixed with flumioxazin or sulfentrazone product. Metribuzin rate for corn varies by soil type and is limited to a maximum of 5.33 oz of 75DF.
- Basis Blend/other rimsulfuron products + 2,4-D + metribuzin/atrazine
  - Comments: some grass control; limited burndown activity on several key species; better used in corn due to long wait to plant soybeans (15 to 60 days)
- Harmony Extra/similar products + 2,4-D + metribuzin
  - Comments: average (70-80%) control on many key broadleaves; no grass control; additional residuals and POST products necessary for in crop weed control; can be used in corn or soybean

Corn only

- Acuron/Lexar/generic equivalents/Resicore + atrazine
  - Strengths: winter and summer annuals; burndown and residual in one-pass; can add more atrazine or 2,4-D
  - Weakness: poor control of cereal rye and ryegrass; corn only

Soybeans only

- 2,4-D + metribuzin + clethodim
  - Strengths: some grass suppression including cereal rye and ryegrass;
  - Weakness: 2,4-D antagonizes clethodim activity; cool weather limits clethodim activity; use rate of clethodim is not high enough if used before corn planting
- Metribuzin + 2,4-D + chlorimuron product
  - Comments: good fit in fields that were treated prior fall; Some chlorimuron products contain metribuzin – suggest supplementing with additional metribuzin so total is the equivalent of 6 to 12 oz 75DF. Does not control grasses. Canopy/Cloak Ex contains tribenuron, which improves control of chickweed.

Resources (some may be temporarily unavailable until the 2022 edition is being sold) “Weed Control Guide for Ohio, Indiana, and Illinois”, “Mid-Atlantic Weed Control Guide”, “MSU Weed Control Guide for Field Crops”, “2022 Weed Control Recommendations for Kentucky Field Crops”

# Livestock Producers Could Soon Have Another Forage Option After Purdue Breakthrough

By Andy Eubank

After many years of research, a team at Purdue University has developed a breakthrough that could lead to increased use of grazing sorghum in northern climates where frost conditions prevented such a forage program for livestock producers.

Purdue's Dr. Mitch Tuinstra says grazing sorghum has many benefits, but it also produces a secondary metabolite called dhurrin.

"High dhurrin concentrations in the forage can lead to cyanosis in animals feeding on the forage, meaning they can be toxic and release cyanide gas, or sometimes this is known as prussic acid poisoning," he explained. "Producers have to be careful and manage it properly to avoid any risk of prussic acid poisoning."

Higher concentrations of dhurrin develop as cold and frost arrive, further incentivizing research to develop a dhurrin-free sorghum.

"Twelve years ago already we began a research project to see if we could disrupt this pathway in sorghum so that the plants would not produce dhurrin, and we've been successful in that research activity, and we've incorporated this new dhurrin-free trait into sorghum sudan grass hybrids," Tuinstra told HAT. "We've had a whole series of research projects going on the last few years exploring the nutritional value of this new crop, exploring the safety and safety benefits, evaluating differences in palatability of dhurrin-free versus conventional sorghum, and the results have all been very, very positive."

Because of its benefits, sorghum for pasture has been a favored option around the country and around the world.

"For many, many years sorghum sudan hybrids have played an important role in providing pastures for livestock producers," he said. "It's adapted to dry environments. It's a low-input crop. It's very resilient to potentially the effects of climate change in terms of adaptation to high temperature stresses and drought stresses."

Dr. Shelby Gruss at SIPAC Field Day-photo provided

Dr. Shelby Gruss is a Purdue post-doctoral scholar. Dr. Tuinstra credits her work on the dhurrin-free sorghum project.

"Shelby has been instrumental in helping us evaluate the nutritional quality and safety characteristics of this new genetic technology and it's really been largely based on her work and drive that we've really made a lot of progress in the last few years in developing and now pushing commercialization of this new trait in sorghum."

The researchers teamed with Ag Alumni Seed Company and S & W Seed Company to develop and commercialize the seed and bring it to market. Tuinstra says they're working closely together to "further develop the trait and develop hybrid products that farmers can buy and grow in their pastures."

Tuinstra is the Wickersham Chair of Excellence in Agricultural Research and Professor of Plant Breeding and Genetics at Purdue. He explains more in the full HAT interview: <https://hoosieragtoday.com/livestock-producers-could-soon-have-another-forage-option-after-purdue-breakthrough/>

# Upcoming Events

January 22nd - Women's Night Out

[SEE FLYER](#)

Fridays in January - Grow Your Farm Fridays

[SEE FLYER](#)

January 27th - Master Gardener Meeting

February 6th - So. IN. Vegetable Growers Meeting

[SEE FLYER](#)

February 10th - Cattlemen's Annual Meeting

February 25th - Niche Marketing & Diversification Program



## Master Gardener News

### Upcoming Meetings:

Jan 28—6:30pm

@Orange County Community Center

Feb 24—6:30pm

@Orange County Community Center

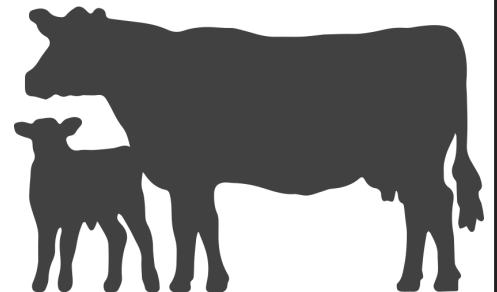
## Cattlemen News

### Upcoming Meetings:

Annual Meeting with SWCD

February 10th

If you are a beef producer in Orange County, please join the Cattlemen!



## Events & Flyers

Purdue Extension - Orange, Crawford & Harrison Counties invite you to a

# Women's Night Out

*celebrating farm and ag women*

January 26th, 2022 at 6pm at  
The Happy Hive & Buzzin' Suds Axe Throwing



2834 South State Road 66  
Marengo, IN 47140



*How fun!?! Join us for an evening of food and fun! Dinner served by Happy Hive,  
Axe Throwing, Socializing, and more!  
Guest speakers will be announced soon!*

*All ages welcome! Must be 10& up to throw axes.*

*Tickets \$30 includes meal & axe throwing*

*To RSVP, call the Purdue Extension - Orange County  
Office at 812-723-7107 by January 15th*



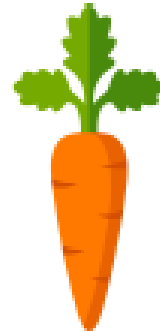
# Flyers and Info



Extension - Floyd County

## 2022 Southeastern Indiana Vegetable Growers Meeting

Monday  
February 7, 2022  
6:00p.m.-8:00p.m.



**This program will be offered as a hybrid!**

To attend the program virtually please go to  
<https://bit.ly/3nNgeih> to register.

If you would like to attend this program in person  
or have questions, please contact the Purdue  
Extension Floyd County Office at 812-948-5470 or  
email Gina at [gmanders@purdue.edu](mailto:gmanders@purdue.edu)



### Schedule

6:00p.m.-7:00p.m.

**Growing Organic Transplants**

Liz Maynard

Purdue Extension Specialist and Clinical Engagement  
Associate Professor

7:00p.m.-8:00p.m.

**Reducing Pollinator Exposure to Pesticides in Specialty  
Crops -PARP Regulatory Topic**

Purdue Extension Educators

This program is free and open to anyone interested in growing vegetables.

Registration is needed by Noon on February 2nd.

If you need PARP credit, there a \$10 fee and a required form to fill out.



# Flyers and Info



## Strengthening The Farm WEBINAR SERIES

**SECOND WEDNESDAY OF  
EACH MONTH**

11:30 AM - 12:30 PM

Register at:

<https://bit.ly/2XD6b4r>

**TOPICS:**

December 8th - Recordkeeping

January 12th - Farm Stress

February 9th - Succession Planning

March - No Webinar

April 13th - Marketing your  
Products



# Flyers and Info



## 'GROW YOUR FARM' FRIDAYS

*Developing Key Skills in Younger Crop Producers*



### **Six sessions for producers working towards management responsibility**

*Join us in-person or virtually on Friday mornings*

**Jan. 21-Feb. 25, 2022**

**9:00-11:30AM Eastern**

Register by January 17

<https://cvent.me/l7RdwB>

**\$100 per person**

For more information visit [extension.purdue.edu/whitley](https://extension.purdue.edu/whitley)  
For reasonable accommodation to participate,  
call 260-636-2111 prior to the program.

### **Locations**

**Dubois County 4-H Fairgrounds**  
4157 S. State Road 162  
Huntingburg, IN 47542

**Purdue Extension - Hancock County**  
802 Apple St.  
Greenfield, IN

**Kokomo Howard Public Library - S**  
1755 E. Center Rd.  
Kokomo, IN 46902

**Purdue Extension - Noble County**  
2090 N SR 9  
Albion, IN 46701

**Pinney Purdue Agricultural Center**  
11402 South County Line Rd.  
Wanatah, IN 46390

**Purdue Extension - Putnam County**  
12 Central Square  
Greencastle, IN 46135

or join the virtual option

### **Sessions**

Strategic Thinking for Farm Management  
Pesticide Licensing & Safety, Diversification  
Grain Marketing & More  
Corn & Soybean Production & Sustainability  
Legal Considerations for Ag Production  
Farm Resiliency & Growth - Farmer Panel

GET THE DIRT ON ORANGE COUNTY AGRICULTURE

# Orange County Agri-News

December/January 2021/2022



Extension - Orange County

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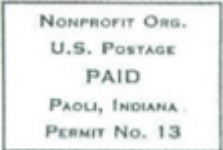
- 1. In the Works
- 2. Harvest Meals
- 3. Start Clean, Stay Clean
- 4. Corn Planting Considerations
- 5-6. Beef Antibiotics
- 7. Alternative Burndown
- 8. Forage Research
- 9. Upcoming Events & Flyers



PURDUE UNIVERSITY COOPERATIVE EXTENSION SERVICE

*Orange County*  
County Office Building  
205 East Main Street, Suite 4  
Paoli, IN 47454-1596

*Cooperating with U.S. Department of Agriculture*



Orange County Office Building · 205 East Main Street, Suite 4 · Paoli, IN 47454-1596  
(812) 723-7107

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